

A comparative survey for assessing Rashidabad city hospitals quality with District Headquarter Hospital

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Abstract

Patients are the key stakeholders of any hospital and it is important to satisfy them. The objective of this study was to compare the quality of hospitals within Rashidabad; a town in rural Sindh operated by Rashid Memorial Welfare Organization (RMWO), with District Headquarter hospital Tando Allahyar. A cross sectional survey, based on a questionnaire designed in congruence with literature, regarding the hospital quality was conducted on 150 patients in October 2016. The target population was defined as patients getting treatment at hospitals within Rashidabad; whose estimate was reported by RMWO as 2000 per week. Hospital quality index (HQI) was framed in the light of quality of staff, ward, pain management practices and hygiene which includes food. Logistic Regression was applied on HQI that showed dependence of perception about hospital quality on age, hospital location and patient's health. Results were significantly in favour of hospitals within Rashidabad.

Keywords: Patient Satisfaction, Logistic Models, Rashidabad, Hospital Quality.

Introduction

Health is one of the important rights of human beings and this is the reason it is an important part of the Sustainable Development Goals framed by United Nations.¹ Hence, hospitals are a means of achieving SDGs¹ pertaining to health that discuss high quality services to the masses and this exhibits the importance of hospital quality. Low standards of services maintained by hospitals can generate significant financial loss in terms of decline in revenue and hence, hospital's inability to invest for betterment of more patients.² Health care organizations and hospitals are expected to improve satisfaction of patients and work on strategies to improve quality of health services

provided by these entities.³ The very fact that quality is an abstract notion that can have different interpretations according to context⁴ and can only be defined operationally, effects the variation in the manner different researchers define hospital quality with reference to its dimensions such as patient experience, monetary and non-monetary efficiency, and outcomes measures.⁵ Keeping in view the focus of the current study the discussion unfolds patient experience as an important indicator of hospital quality. Despite the abstractness of the notion of hospital quality the key stakeholders in this sector agree that hospital quality should be patient centered.⁶ Patients are one of the integral stakeholders in health sector and their perceptions are very important when discussing quality of health care.⁷⁻⁹ Perceptions of patients about hospital quality can depend upon process of interaction between patients and staff/doctors, physical environment, quality of food served to in patients and quality of consolidated outcomes such as lower readmission rates, shorter length of stay, and fewer patient complications etc.¹⁰

It is an unfortunate fact that in Pakistan the public health facilities are in poor condition and health indicators are deteriorating.¹¹ Patients in Pakistan have suffered a lot due to various impediments in the state healthcare system such as structural fragmentation, incompetence, resource paucity and lack of functional specificity.¹¹ Due to low perceived quality of public sector hospitals patients prefer private hospitals in Pakistan.¹¹ Despite the public preferences towards private hospitals there is an evidence of relative strength of public sector hospitals of Pakistan in terms of lower treatment costs.¹² Moreover, literature provides evidence that the supremacy of private sector is just in terms of patients' perceptions otherwise it is not more efficient, accountable, or medically effective than their public sector counterparts.¹³ So much so that many researchers completely abhor the commercialized business models of private sector by presenting the view that private hospitals only focus on winning patients satisfaction by offering hospitality and ignoring real variables (such as low readmission rates) of hospital quality.¹⁴

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The charity hospitals are another option available to the poor masses of Pakistan. The importance of charity hospitals in Pakistan roots out from the fact that out of total 240 million rupees of annual charitable donations the top two recipients of charity are religious organizations followed by health sector.¹⁵ With so much charity giving towards health sector there is a need to analyze the quality of services rendered by charity hospitals.

Rashid Memorial Welfare Organization (RMWO) is one of the many NGOs working in rural Sindh.¹⁶ RMWO has wisely chosen a poverty struck area for Rashidabad as many villages are located around it. The NGOs in Rashidabad provide health, education and career opportunities to the local populace. The health facilities at Rashidabad include Bilquis Mushaaff General Hospital and Layton RehmatUllah Benevolent Trust eye hospital.¹⁶

Based on the aforementioned facts, we decided to measure the patient satisfaction at Bilquis Mushaff Medical Complex and Layton RehmatUllah Benevolent Trust Eye hospital (Both located in Rashidbad City) and District Headquarter Hospital, Tando Allahyar. Both RMWO and DHQ serve the poor patients at subsidized rates, therefore it will be thought-provoking to measure whether RMWO is providing comparative / competitive services like DHQ hospital mandated by Government in term of patient satisfaction or not. Keeping in view the importance of patients' perception⁷⁻⁹ in shaping the impressions about hospital quality this study is focused on viewing hospital quality from this particular angle.

Methodology

A cross sectional survey encompassing 150 patients was conducted in October 2016, at the Bilquis Mushaff Medical Complex (BMMC) and Layton RehmatUllah Benevolent Trust Eye hospital (LRBT) and District Headquarter Hospital (DHQ), Tando Allah Yar among patients who were at least 18 years of age, hospitalized for two or more weeks, conversant with Sindhi, Urdu or English, having no psychiatric illness and who agreed to provide responses to the questions after giving informed consent to be interviewed were included in this survey. Hence, patients who did not agree to provide response, were not inpatients or were admitted at Mental Health Unit or ward were excluded.

The sample size of the study was calculated based on guidance from literature.¹⁷ According to RMWO sources the weekly patient attendance is 2000 (with N=1200 for BMMC and N=800 for LRBT) to calculate the sample size,

5% of the total population was considered which gave the figure of 100 (and 5% rule yielded sample sizes of 60 and 40 for BMMC and LRBT, respectively). Moreover in order to keep the margin of error (sampling error) less than 5% we used $1/\sqrt{N}$ formula¹⁷ which gave a margin of error of 2.27%. DHQ administration allowed no more than 50 patients to be interviewed therefore; sample size was capped at 50. A total of 180 patients were requested to fill out the questionnaire however, only 150 agreed to fill it out (Response Rate: 83.33%). Within BMMC, stratified random sampling was used for data collection by getting data from 5 patients under treatment at dialysis Center, 25 at paediatrics (attendants were respondents in this case; 23 were parents of patients and 2 were caretakers) and 30 at gynaecology department. Randomization was ensured by using circular systematic sampling within each department and visiting the department to choose a random number between 1 to 5 and then sampling every patient staying in every ward/room (in case of more than one patient in a ward any patient was chosen randomly). Within LRBT, stratified random sampling was used for data collection by getting data from 20 patients who had undergone phacoemulsification surgery and 20 patients who had undergone surgery for glaucoma. Similar approach was followed at DHQ. Surveyed patients were given brief explanation about the survey.

Questionnaires were originally in English and they were translated in Sindhi or Urdu by two Sindhi locals (well versed with English and Urdu) who were hired by the research team, after two week training on interviewing techniques and avoiding interviewer bias, and they were required to write down responses in English without looking at the other enumerator's response so that later on it could be confirmed that there was no bias while filling the form. It is worth-mentioning that English and Urdu language proficiency of the enumerators was checked by written and oral tests conducted by the principal investigator of this study. Sindhi language proficiency was judged on the basis of provision of evidence that the enumerators have studied Sindhi as a course during their schooling. The participating patients were verbally assured that their responses will be used only for research purposes and findings will be published in an anonymous manner. Permission was taken from hospital administration for conducting the survey however exact date of survey was kept confidential to avoid artificially favourable responses. A structured survey instrument serving the study objectives was developed and administered. Additionally, data on

several demographic variables was collected. The survey questionnaire included binary questions developed by the researchers with the help of literature.¹⁸⁻²⁰ The form consisted of 7 questions pertaining to socio-demographic characteristics of patients and 15 binary questions to evaluate hospital quality. Hospital quality index was constructed by summing up the responses of the 14 hospital related questions and then cut-off was decided at sample median. The binary index for hospital quality (HQI) was coded 0 if the summated variable was less than or equal to the sample median and 1 otherwise. We Sum up Question 1 to Q 14 and calculated the median (say M) of this summated variable. Values were assigned to HQI as follows; HQI= 0, if Sum (Z) $\leq$ M and HQI=1, if Sum (Z) > M.

SPSS 21 was used for descriptive and inferential analysis of the data collected. Basic frequency analysis was used to summarize information about socio-demographic and health satisfaction variables. Further, Contingency Coefficient was used for assessing association of hospital quality with socio-demographic variables. Bivariate Logistic Regression was applied to delineate the impact of socio-demographic variables, short-listed from Contingency Coefficient analysis: only the ones having significant relationship with the hospital quality were included in the model. Significance value (P-Value) below 5 percent was considered statistically significant.

Reliability and validity are two interrelated traits that need to be checked both during and after execution of a questionnaire. Noting that questions asked for this survey can be categorized into four groups (i) Q1 and 2 related to staff (ii) Q 3 to Q9 related to stay at hospital and (iii) Q10 and Q 11 related to pain management and (iv) Q 12 to Q14 related to hygiene (physical which includes food). We computed Cronbach-alpha for these groups, by using the data from pilot survey done on 40 patients, which was 0.483, 0.672, 0.982 and 0.583, for group (i), (ii), (iii) and (iv), respectively. Keeping in view the fact that Cronbach-alpha alone cannot measure reliability especially when there are fewer than ten questions in the group we also performed inter-item correlation test for all four groups separately and the optimal condition for mean inter-item correlation being greater than 0.2 was met in all groups.¹⁸ Content validity of the questionnaire was checked by getting the questionnaire evaluated by three doctors (one serving at BMMC, and two serving in Islamabad) and they were asked to respond to the following questions;

Whether or not the questionnaire is clear?

Do the questions asked measure hospital quality?

After receiving inputs of these experts some questions were rephrased and the final form was achieved.

Results

Results were acquired based on the data of 150 patients of whom 60 were hospitalized at Bilquis Mushaff Medical Complex, 40 at Layton Rehmatullah Trust Eye Hospital and 50 at District Headquarter hospital TandoAllah Yar. Of them, 71 (47.3%) were females and 79(52.7%) were males, 112(74.7%) belonged to families earning less than 15,000 PKR per month, 35(23.3%) belonged to families earning between 15,000 to 30,000 PKR per month and 3(2%) belonged to families earning more than 30,000 PKR per month, 91(60.7%) had less than matric qualification and 59(39.3%) had matric or more than matric qualification, 82(54.7%) were between at least 18 years of age but less than 30 years, 44(29.3%) were in the age group 30 or more but less than 50, 24(16%) were aged 50 or more.

Table-1 reports the percentages and counts of affirming and negating responses about various questions asked. For instance, for the question, "On arrival to the ward did all the staff welcome you", within Rashidabad i.e. BMMC and LRBT, 86% (86 patients) responded Yes Hence, for first question, within BMMC 86.7% (52 patients) reported Yes, within LRBT 85% (34 patients) reported Yes and within DHQ hospital 52% (26 patients) reported Yes. Similarly, question 2 to 11 can be interpreted. Question 12 to 15 are provided response options Good and Bad. For question 12, "How would you rate the cleanliness", within BMMC 58 (96.7%) responded Good, within LRBT 39 (97.5%) responded Good and 44 (88%) responded Good within DHQ. Similarly, question 13 to 15 can be interpreted.

Hospital quality can be compared overall by noting the fact that BMMC superseded all other hospitals in 9 criteria and LRBT was at second rank by superseding other hospitals in 6 criteria. Performance of DHQ hospital was invariably well below BMMC and LRBT.

Hospital quality index was found to be significantly associated with hospital location (Contingency Coefficient $P=0.00$), self-reported health (Contingency Coefficient $P=0.00$) and age (Contingency Coefficient Sig. value= 0.00). No significant association was found between hospital quality index and gender, income and distance of respondents' residence from Rashidabad. Hospitals operating within Rashidabad or operating outside as 87(87%) of the

Table-1: Satisfaction Level from Hospitals: Percentage (counts) of Yes (Good¹).

Statement	Overall ²	BMMC	LRBT	DHQ
1) On arrival to the ward was all the staff welcoming to you?	86	86.7%(52)	85%(34)	52%(26)
2) Did the staff clearly identify themselves to you?	85	83.3%(50)	87.5%(35)	20%(10)
3) Were you orientated to the ward?	55	48.3%(29)	65%(26)	44%(22)
4) Was a brief plan of your stay explained to you at this time?	51	53.3%(32)	47.5%(19)	44%(22)
5) Were you encouraged to ask questions about your stay during this meeting?	50	56.7%(34)	40%(16)	46%(23)
6) Were you encouraged to ask questions about your discharge during this meeting?	55	58.3%(35)	50%(20)	46%(23)
7) Were you given enough information to prepare you for your theatre experience?	97	98.3%(59)	95%(38)	50%(25)
8) How would you rate your theatre experience?	98	98.3%(60)	97.5%(39)	14%(7)
9) Were you adequately informed regarding fasting procedure, pre-surgery?	92	95%(57)	87.5%(35)	96%(48)
10) During your stay, was your pain adequately controlled?	85	88.3%(53)	80%(32)	52%(26)
11) Was your pain management treated in a sympathetic manner?	86	90%(54)	80%(32)	50%(25)
12) How would you rate the cleanliness?	97	96.7%(8)	97.5%(39)	88%(44)
13) How would you rate the bathroom facilities?	97	95%(57)	100%(40)	22%(11)
14) How would you rate the quality of the food?	80	75%(45)	87.5%(35)	8%(4)
15) Overall how would you rate health facilities in Rashidabad?	98	96.7%(58)	100%(40)	N.A

¹Question 12 to 15 has response options Good and Bad instead of Yes and No. ²Sample size is 100 here hence both counts and percentages are same.

BMMC: Bilquis Mushaff Medical Complex. LRBT: Layton Rehmatullah Benevolent Trust. DHQ: District Head Quarter Hospital.

Table-2: Binary Logistic Regression Model for Hospital Quality.

Variables in the Equation (Dummy Variables)	B	S.E.	Wald	df	Sig.	Exp(B)
At least 18 but less than 30 years of age	3.03	.81	13.90	1	.00	20.69
At least 30 but less than 50 years of age	-.47	.73	.43	1	.51	.61
Hospital Location	3.57	.70	25.39	1	.00	35.52
Self-Reported Health	1.69	.57	8.79	1	.00	5.46
Constant	-3.46	.83	17.26	1	.00	.03

respondents who rated HQI= 1 were from hospitals inside Rashidabad. There was negative association of age and hospital quality index as 52(75%) of the respondents who rated hospital quality as high were less than 30 years' age. Self-reported health was significantly associated with hospital quality index and patients with health score=1 were more likely to have HQI= 1. Of the 100 patients who were satisfied with hospital quality, 78(78%) belonged to relatively better self-reported health group and out of 50 patients who reported to be not satisfied (i.e. HQI= 0) with hospital quality, 32(64%) belonged to those with health score= 0.

Logistic Regression Equation is given as follows;

$$p(HQI=1)= \frac{1}{1+\exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)}$$

Where, X_i 's are the independent variables and $p(HQI=1)$ represents probability of HQI=1 and exp represents exponential function.

Binary Logistic Regression technique has been applied

on Hospital Quality Index and results are given in Table-2. The Odds Ratio for Hospital Location is 35.52 which imply that the odds of HQI= 1 are approximately 36 times higher for hospitals run within Rashidabad then the odds of hospital quality index being higher in DHQ. Age category 1 (At least 18 but less than 30 years) is significantly different from age category 3(50 or more) with $P= 0.001$. The odds of patients HQI= 1, aged at least 18 but less than 30 years are approximately 21 times than the odds of patient aged 50 or more. Age category 2 (At least 30 but less than 50) is insignificant as $p>0.05$. However, the magnitude of odds ratio tells that this age group is less satisfied than the group comprising patients aged 50 or more. Self-reported health was a significant predictor of hospital quality index and patients who had health score= 1 had 5 times more odds of HQI= 1.

Discussion

The objective of this study was to analyze the performance of two charity hospitals run by RMWO. Perceptions about hospital quality are seen to be

dependent upon age with youngest group possessing the most positive perceptions about hospital quality. In literature there are mixed empirics about the relationship between age and patient satisfaction. There is little evidence of younger age patients being more satisfied with hospital quality.²² Our findings about age are in contrast with some studies that report elder age groups as more satisfied with hospital quality.²³⁻²⁶ However, demographics variables, which includes age, often exhibit conflicting findings in different studies²⁷ while some even eschew the need to study the relationship between patient satisfaction and demographics because these are concomitant variables out of control of the hospital.²⁷ Self-reported health proved to be an important predictor of perceived hospital quality which stands in agreement with literature.^{22,28}

Total quality management (TQM) is the ubiquitous among service companies which includes hospitals as well.¹⁰ But before opting for TQM there is a need to set the quality culture in hospitals and monitoring patient satisfaction.¹⁰ In this perspective this study has a contribution that it provides guidelines, both for charity and public sector hospitals in Sindh, to enhance patient satisfaction rates. The importance of charity hospitals can be previewed both in developing and developed countries context. Even in countries with near-universal medical coverage contributions of charity hospitals cannot be denied.²⁹ With a significant share of population of Tando Allahyar experiencing poverty,³⁰ it is important to provide low-cost yet efficient health services and hence, RMWO is playing its part in addressing this issue.

Limitations and Recommendation

This study is an effort to understand the contributions of RMWO in serving the health needs of marginalized population in Tando Allahyar. However, in a better funded project one can sample more hospitals and patients to compare the performance of RMWO with other charity, public and private sector hospitals in Tando Allahyar. In DHQ data is limited due to permission issues and future studies can aim at getting more insightful data for comparison purposes. Future studies can also compare the hospitals in terms of outcome based indicators of hospital quality such as readmission rates, surgical site infections etc.

Conclusion

This study has used data from 150 sampled patients from hospitals inside and outside Rashidabad City. Findings of the study speak affirmatively of the hospitals

working inside Rashidabad and health services provided by the hospitals inside Rashidabad are much better than those running outside. Perceptions about quality of services provided by the hospital are dependent on age, hospital location, and self-reported health of the patients. Team witnessed glaring contrast in service quality and cleanliness standards adhered by hospital in and outside Rashidabad. RMWO city maintains strict standard operating procedures to offer clean and friendly environment to its visitors which includes the patients.

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Conflict of Interest: One of the co-authors have signed the ethical letter however, it has been counter signed by head of research department as well.

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